1/10

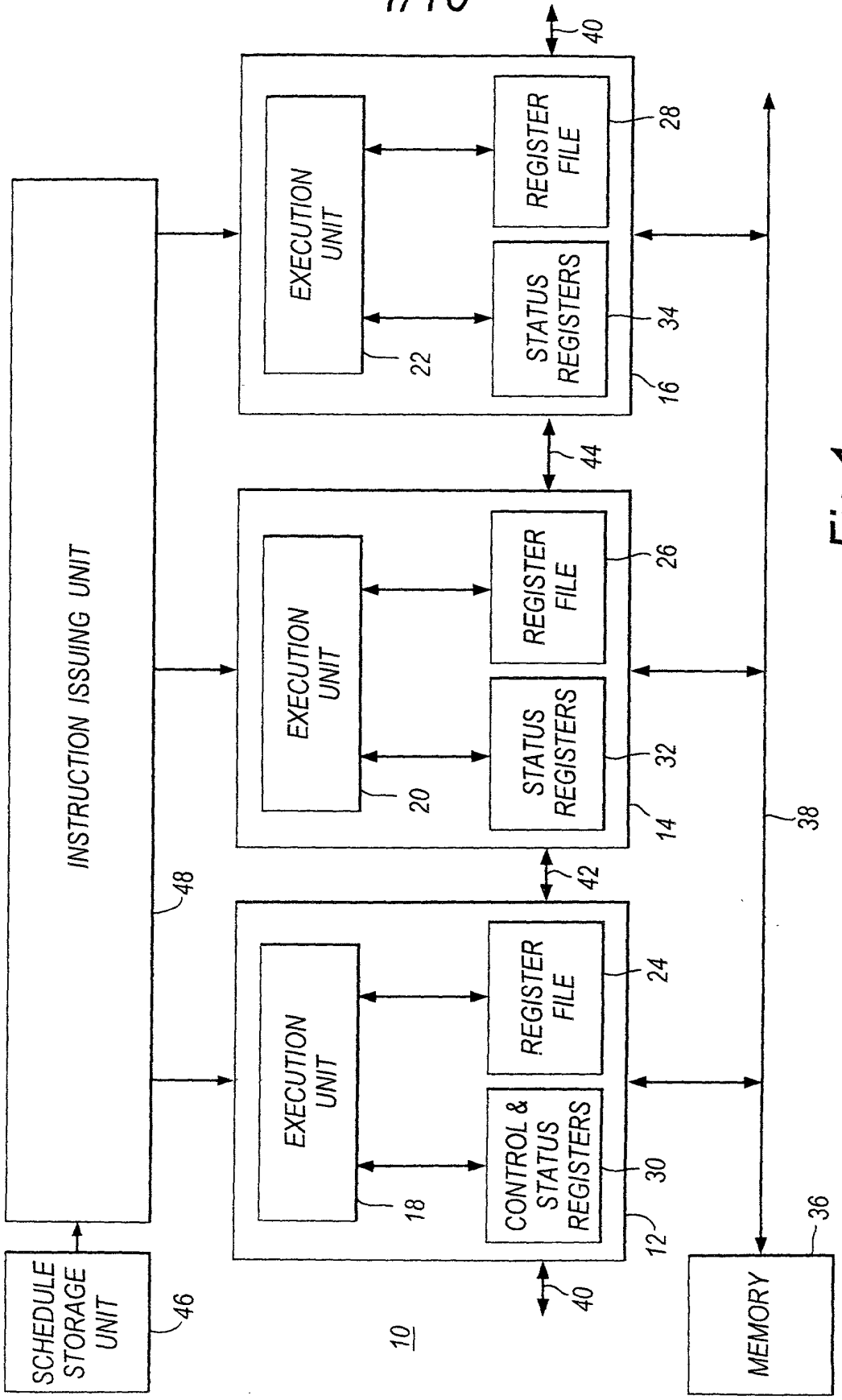

Fig. 1

20040243402

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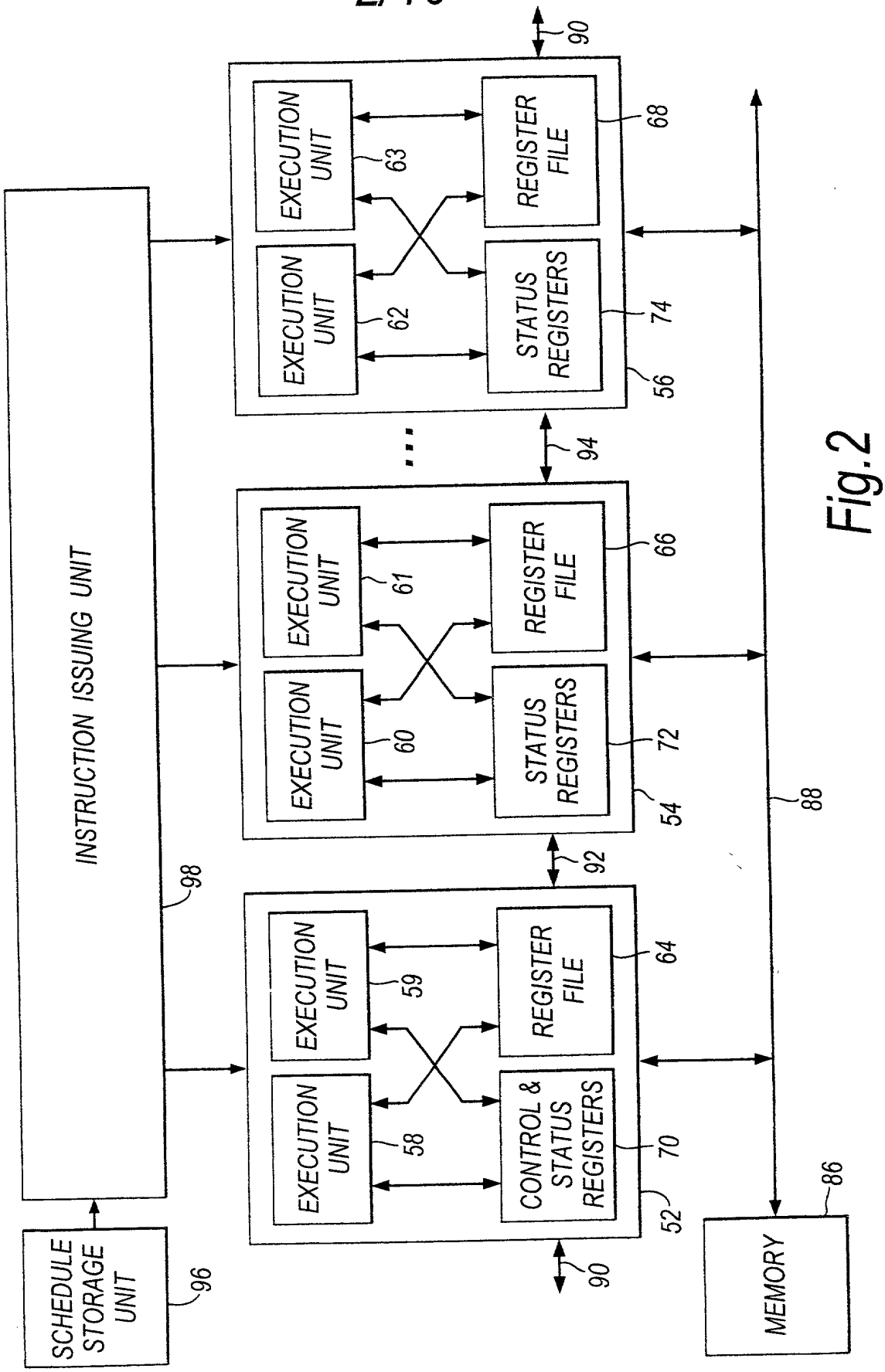

INSTRUCTION ISSUING UNIT
98
SCHEDULE STORAGE UNIT
96
EXECUTION UNIT
59
EXECUTION UNIT
58
REGISTER FILE
64
CONTROL & STATUS REGISTERS
70
52
90
92
EXECUTION UNIT
61
EXECUTION UNIT
60
REGISTER FILE
66
STATUS REGISTERS
72
54
88
94
EXECUTION UNIT
63
EXECUTION UNIT
62
REGISTER FILE
68
STATUS REGISTERS
74
56
90
MEMORY
86

Fig.2

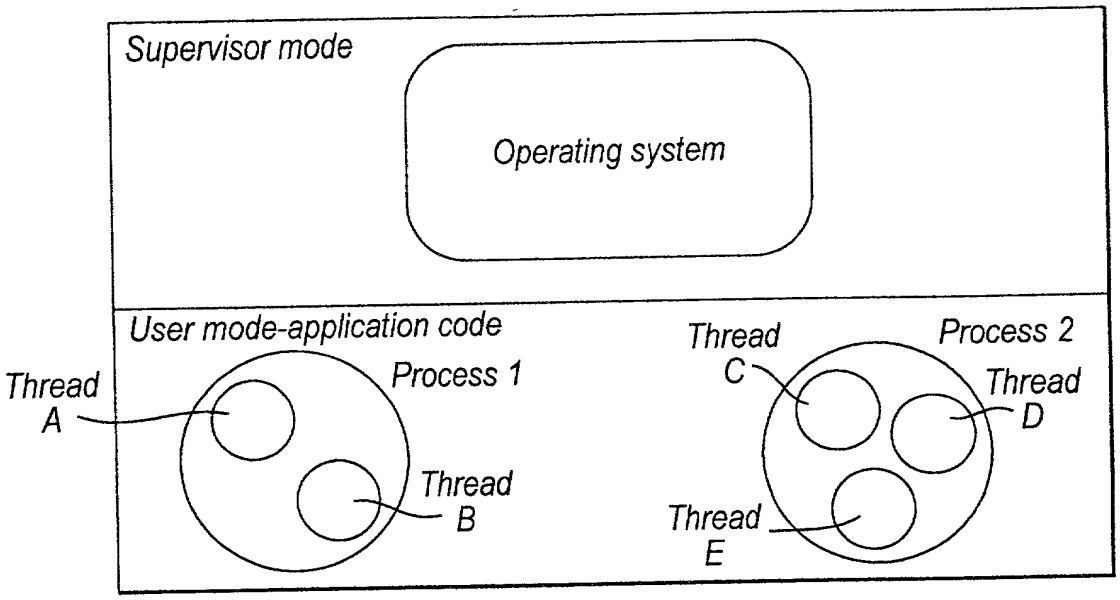
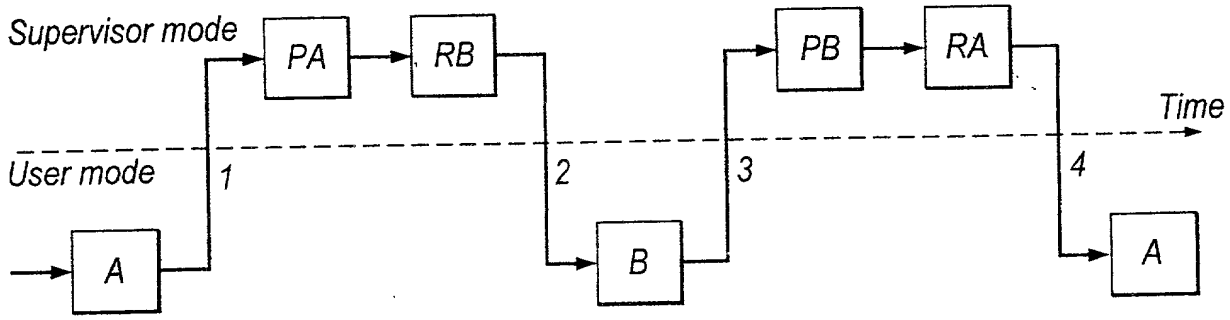


Fig.3



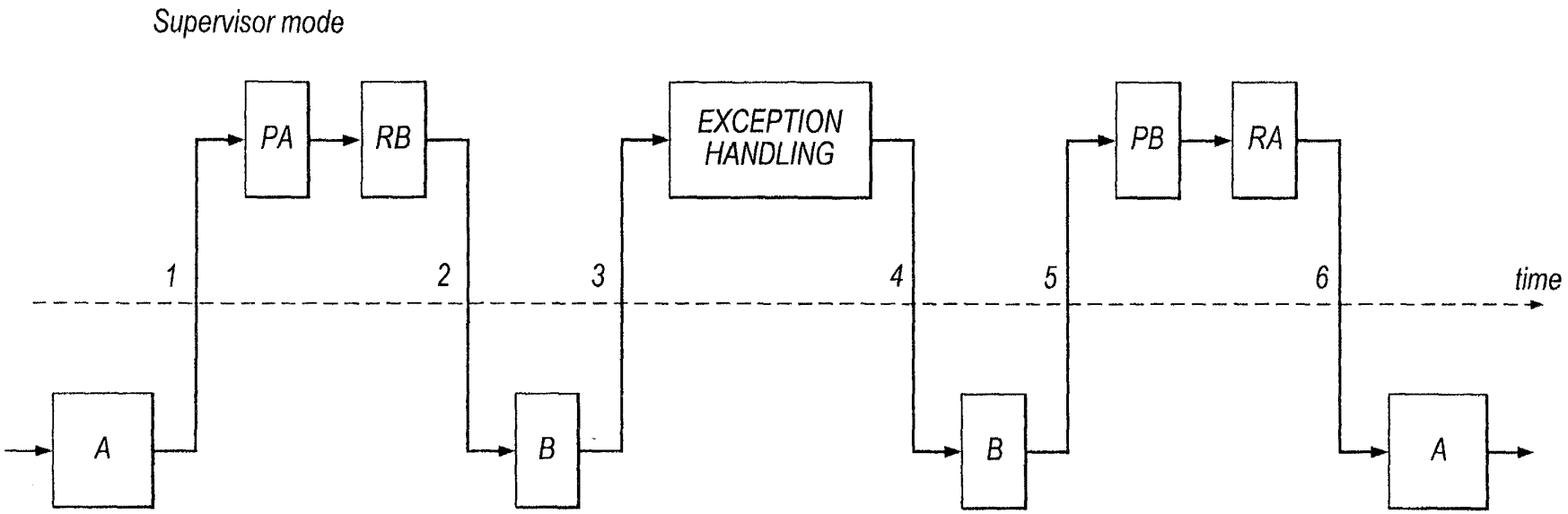
A. Run thread A
B. Run thread B

1. Stop running A
2. Start running B
3. Stop running B
4. Start running A

PA. Preserve context of A
RB. Restore context of B
PB. Preserve context of B
RA. Restore context of A

Fig.4

20F20 2hhE200F



A. Run thread A
B. Run thread B

1. Stop running A
2. Start running B
3. MTE
4. Return to thread B
5. Stop running B
6. Start running A

PA. Preserve context of A
RB. Restore context of B
PB. Preserve context of B
RA. Restore context of A

Fig.5

CONTEXT PRESERVATION
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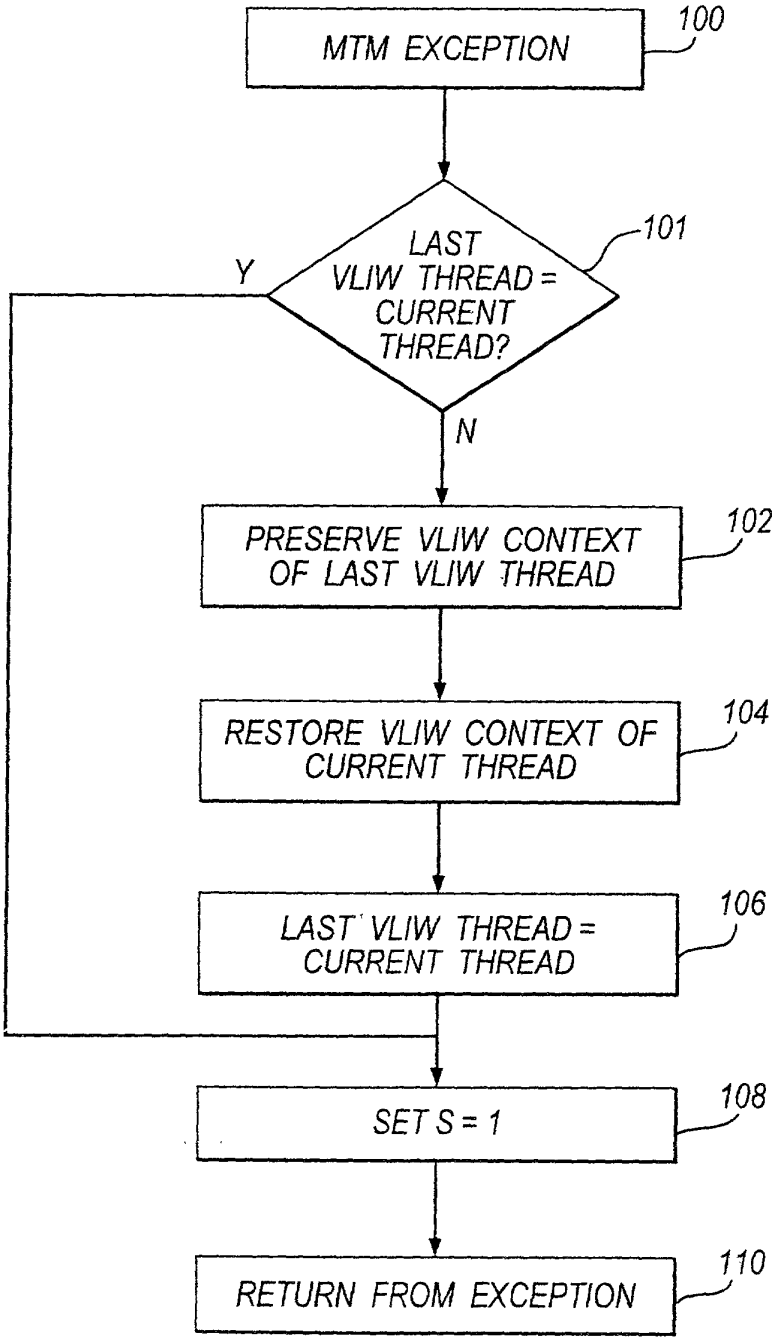

MTM EXCEPTION
100
LAST VLIW THREAD = CURRENT THREAD?
101
Y
N
PRESERVE VLIW CONTEXT OF LAST VLIW THREAD
102
RESTORE VLIW CONTEXT OF CURRENT THREAD
104
LAST VLIW THREAD = CURRENT THREAD
106
SET S = 1
108
RETURN FROM EXCEPTION
110

Fig.6

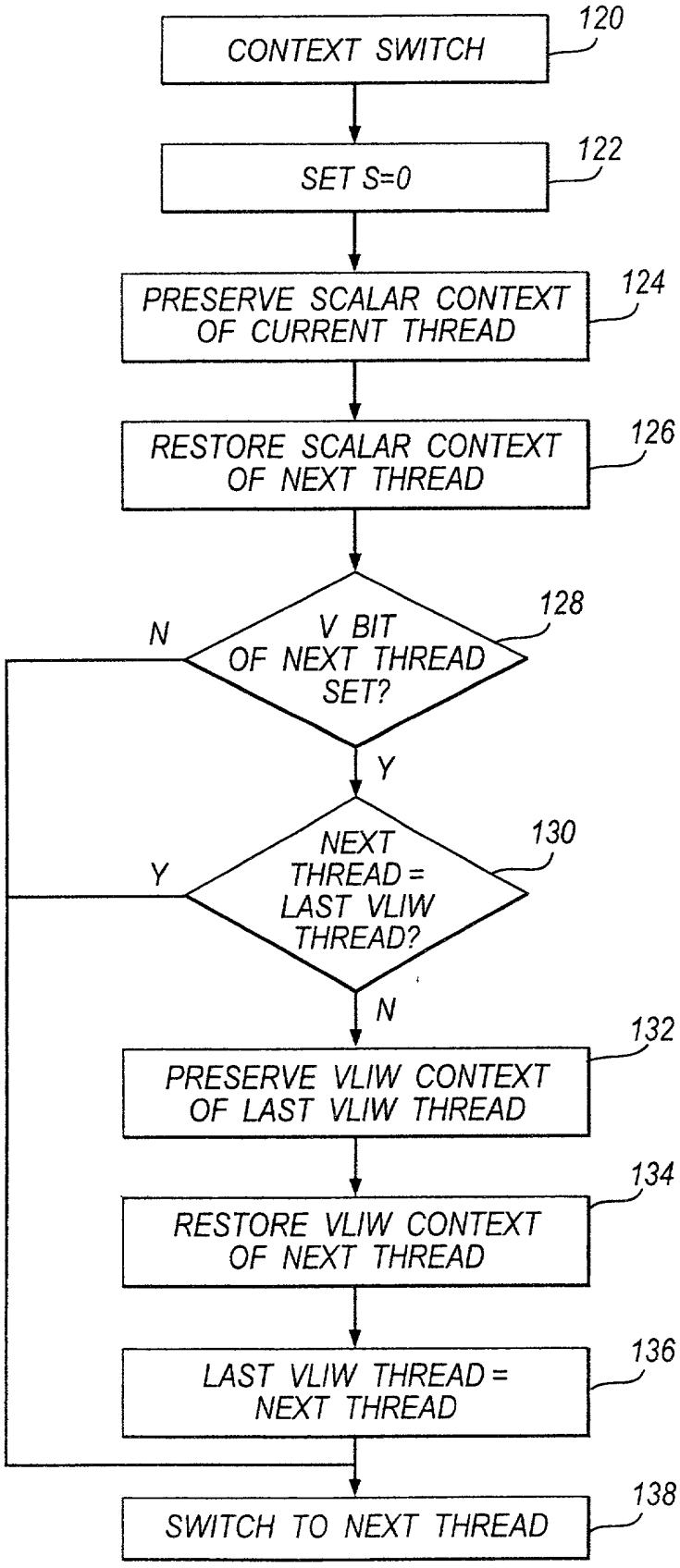
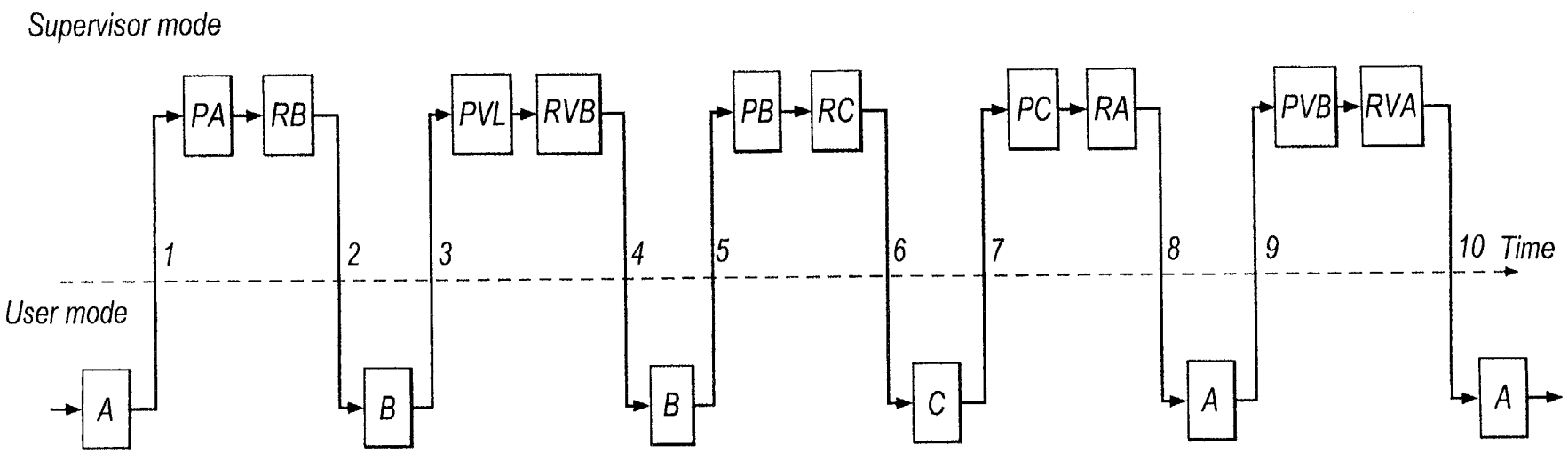

CONTEXT SWITCH
120
SET S=0
122
PRESERVE SCALAR CONTEXT OF CURRENT THREAD
124
RESTORE SCALAR CONTEXT OF NEXT THREAD
126
V BIT OF NEXT THREAD SET?
128
N
Y
NEXT THREAD = LAST VLIW THREAD?
130
Y
N
PRESERVE VLIW CONTEXT OF LAST VLIW THREAD
132
RESTORE VLIW CONTEXT OF NEXT THREAD
134
LAST VLIW THREAD = NEXT THREAD
136
SWITCH TO NEXT THREAD
138

Fig.7

20T730 2hhC20T



A. Run thread A
B. Run thread B
C. Run thread C
PA. Preserve context of A
PB. Preserve context of B
PC. Preserve context of C
RA. Restore context of A
RB. Restore context of B
RC. Restore context of C
PVL. Preserve VLIW context to last VLIW thread
RVB. Restore VLIW context B
PVB. Preserve VLIW context B
RVB. Restore VLIW context A

1. Stop thread A
2. Start thread B
3. MTE
4. Return to thread B
5. Stop thread B
6. Start thread C
7. Stop thread C
8. Start thread A
9. MTE
10. Return to thread A

Fig.8

CONTEXT PRESERVATION
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Greer, Burns & Crain, Ltd. (Patrick Burns)
Ref. No. 0808.65530
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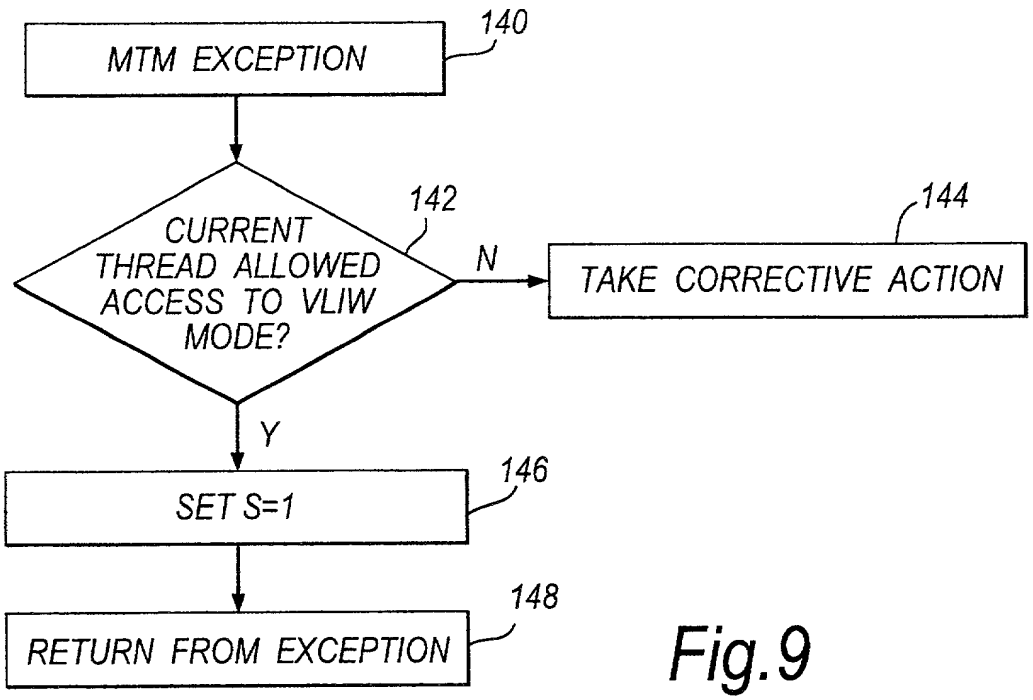
MTM EXCEPTION
140
CURRENT THREAD ALLOWED ACCESS TO VLIW MODE?
142
N
144
TAKE CORRECTIVE ACTION
Y
SET S=1
146
RETURN FROM EXCEPTION
148

Fig.9

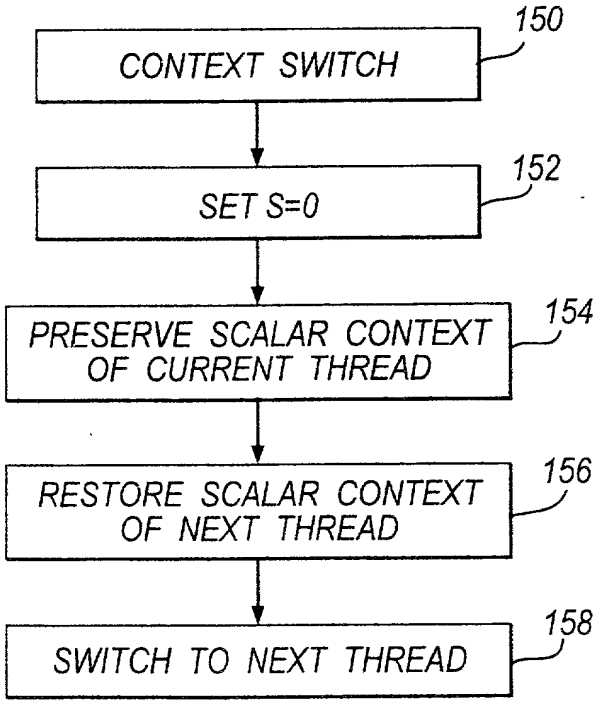
CONTEXT SWITCH
150
SET S=0
152
PRESERVE SCALAR CONTEXT OF CURRENT THREAD
154
RESTORE SCALAR CONTEXT OF NEXT THREAD
156
SWITCH TO NEXT THREAD
158

Fig.10

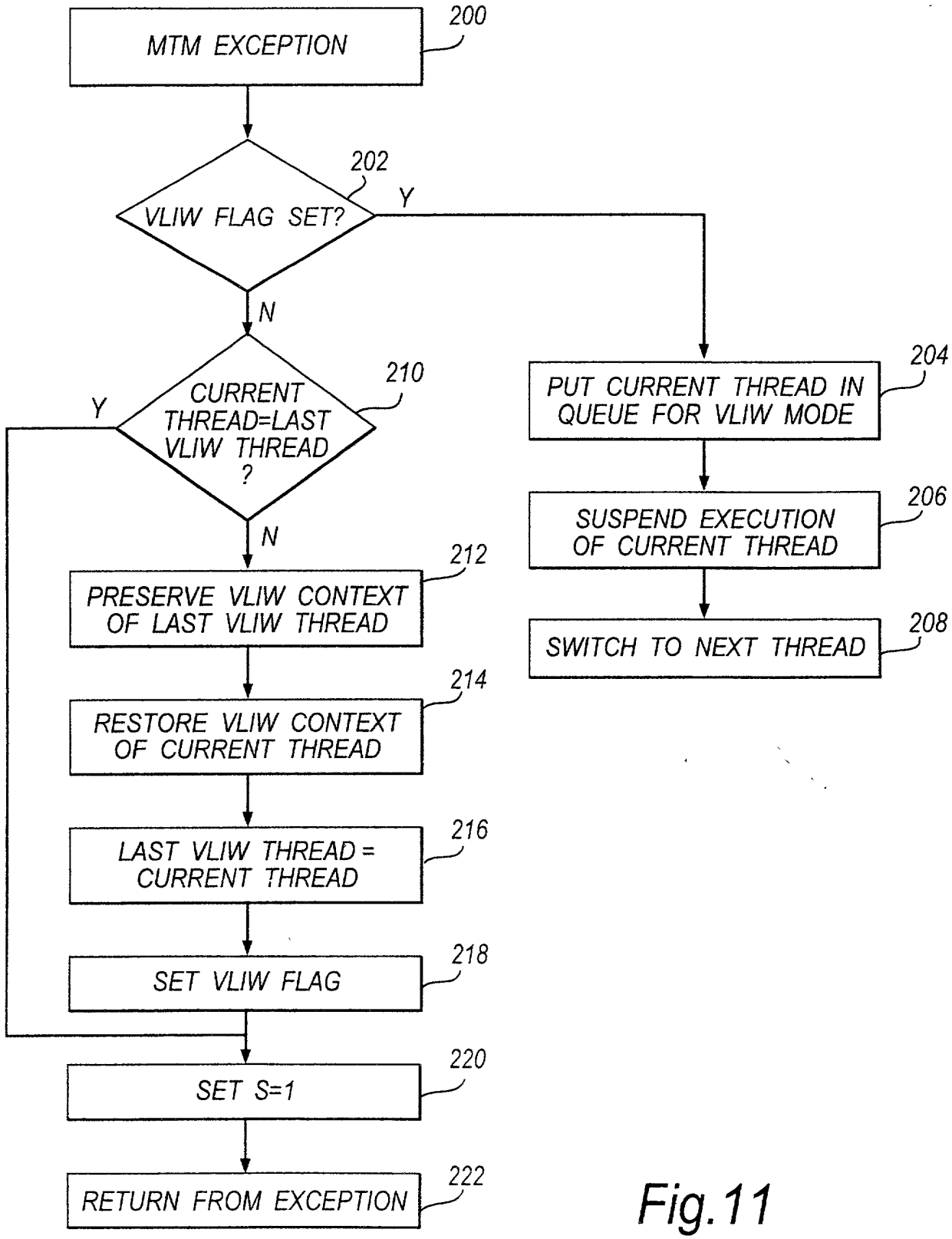

Fig.11

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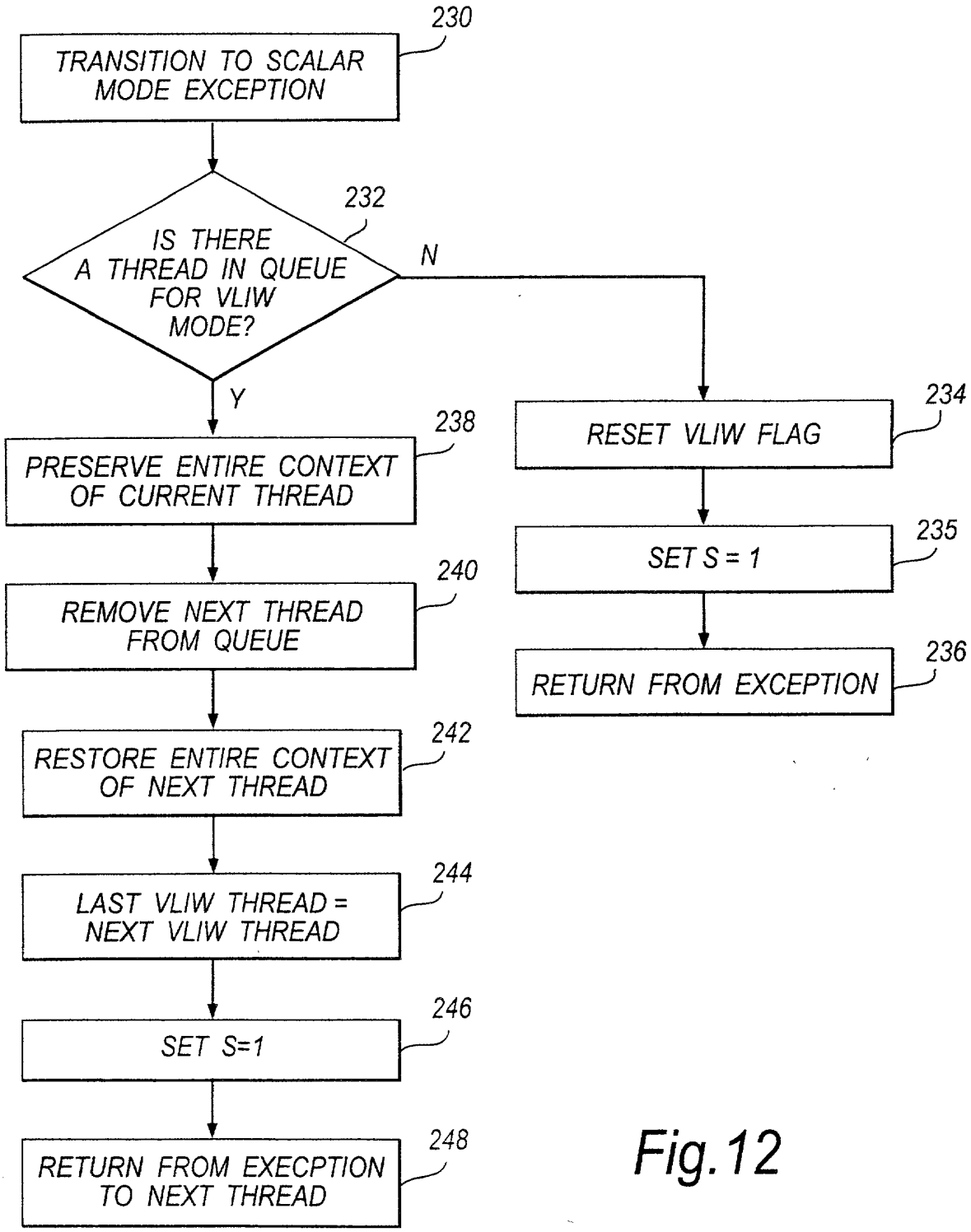

Fig.12

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